

Application No.: 09/933,334  
Amendment Dated: April 14, 2005  
Reply to Final Office Action of: March 23, 2005

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**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A purifier to purify exhaust gas, comprising:

(a) a case having an inlet and an outlet;

(b) a plurality of thin plates disposed in said case,

said thin plates being arranged at predetermined intervals, and each of said thin plates having at least one through-hole;

(c) a catalyst held to each of said thin plates;

said catalyst having a function of purifying the exhaust gas;

(d) partition plates disposed between the respective thin plates,

said partition plates partitioning the spaces between the respective thin plates; ~~and~~

(e) a plurality of U-shaped catalyst heaters are disposed through said plurality of thin plates so that each of said catalyst heaters goes through each of said spaces partitioned by said partition plates, each of said catalyst heaters for heating each of said thin plates, ~~and~~

(f) an external radiation fin,

wherein at least two out of said catalyst heaters have a U-shaped bend portion and straight portions formed at either end of the bend portion;

each of said straight portions is disposed piercing through said thin plates;

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said bend portion is located outside said case; and

said external radiation fin is installed at said bend portion.

wherein the exhaust gas enters into said case from said inlet, and passes through the spaces formed between the respective thin plates, and each of said through-holes, and is exhausted from said outlet.

2. (Cancelled).

3. (Currently Amended) The purifier of claim 1, further comprising:

a pipe;

wherein said ~~exhaust catalyst~~ heater is installed in said pipe; and

said plurality of thin plates are fixed around said pipe.

4.-19. (Cancelled).

20. (Previously Presented) The purifier of claim 1, further comprising:

an external radiation fin,

wherein at least two out of said catalyst heaters have a U-shaped bend portion and straight portions formed at either end of the bend portion;

each of said straight portions is disposed piercing through said thin plates;

said bend portion is located outside said case; and

said external radiation fin is installed at said bend portion.

21. (Currently Amended) ~~The purifier of claim 1, further comprising:~~ A purifier to purify exhaust gas, comprising:

(a) a case having an inlet and an outlet;

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(b) a plurality of thin plates disposed in said case,  
said thin plates being arranged at predetermined intervals, and each of said  
thin plates having at least one through-hole;

(c) a catalyst held to each of said thin plates;  
said catalyst having a function of purifying the exhaust gas;

(d) partition plates disposed between the respective thin plates,  
said partition plates partitioning the spaces between the respective thin  
plates; and

(e) a plurality of U-shaped catalyst heaters are disposed through said  
plurality of thin plates so that each of said catalyst heaters goes through each of  
said spaces partitioned by said partition plates, each of said catalyst heaters for  
heating each of said thin plates,

wherein the exhaust gas enters into said case from said inlet, and passes  
through the spaces formed between the respective thin plates, and each of said  
through-holes, and is exhausted from said outlet,

an external radiation fin,

wherein said plurality of catalyst heaters include a first catalyst heater and a second catalyst heater;

said first catalyst heater includes a U-shaped first bend portion and two first straight portions formed at either end of said bend portion;

said second catalyst heater includes a U-shaped second bend portion and two second straight portions formed at either end of said bend portion;

each of said straight portions is disposed piercing through said thin plates;

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each of said bend portions is located outside said case;

said external radiation fin is installed at each of said bend portions;

said first bend portion and said straight portions of said first catalyst heater are heated; and

only said second bend portion of said second catalyst heater is heated, and said second straight portions are not heated.

22. (Previously Presented) The purifier of claim 1, further comprising:

a temperature detector disposed near the exhaust gas inlet of the case,

wherein said temperature detector has a function of detecting the temperature of said catalyst heater and stopping the power supply to said catalyst heater.

23.-26. (Cancelled).

27. (Withdrawn) A garbage disposer capable of purifying exhaust gas, comprising:

a storage section to store garbage;

a main heater to heat said storage section; and

a purifier connected to said storage section,

wherein said purifier comprises the purifier of claim 1.

28. (Withdrawn) The garbage disposer of claim 27,

wherein said purifier includes a temperature detector, and

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when said temperature detector detects abnormal combustion in said purifier, the operation of at least one of said main heater and said catalyst heater is discontinued.

29. (Withdrawn) The garbage disposer of claim 27,  
wherein said purifier further comprises a pipe,  
said catalyst heater is installed in said pipe;  
said plurality of thin plates are fixed around said pipe;  
said through-hole and said partition plate are disposed in positions such that the exhaust gas is circulated through the spaces;  
said thin plates are made of metal;  
said pipe is also made of metal; and  
the catalyst has a function of deodorizing the exhaust gas.
30. (Withdrawn) The garbage disposer of claim 27,  
wherein said partition plate is bonded to each of said thin plates.
31. (Withdrawn) The garbage disposer of claim 27,  
wherein at least one of said partition plate and said through-hole is formed by cutting and raising said thin plate.
32. (Withdrawn) The garbage disposer of claim 27, further comprising:  
wire netting disposed along the periphery of said thin plates; and  
a heat insulating material disposed around said wire netting,  
wherein each of said thin plates is substantially circular in shape;

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said case is substantially cylindrical in shape; and

said wire netting and said heat insulating material are disposed in said case.

33. (Withdrawn) The garbage disposer of claim 27,

wherein said partition plate includes a plurality of partition plates;

said through-hole includes a plurality of through-holes;

a plurality of spaces separated by said plurality of partition plates are formed between the respective thin plates;

said spaces are respectively connected to said through-holes;

the exhaust gas enters into said case from said inlet, and is separately circulated passing through respective ones of said spaces and said through-holes and is exhausted from said outlet.

34. (Withdrawn) The garbage disposer of claim 27,

wherein said purifier further comprises:

an inlet pipe disposed at said inlet;

an outlet pipe disposed at said outlet;

a low-temperature catalyst that functions at a lower temperature as compared with the catalyst mentioned earlier; and

said low-temperature catalyst is disposed in at least one of said inlet pipe and said outlet pipe.

35. (New) The purifier of claim 21, further comprising:

a temperature detector disposed near the exhaust gas inlet of the case,

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wherein said temperature detector has a function of detecting the temperature of said catalyst heater and stopping the power supply to said catalyst heater.

36. (New) A garbage disposer capable of purifying exhaust gas, comprising:

a storage section to store garbage;

a main heater to heat said storage section; and

a purifier connected to said storage section,

wherein said purifier comprises the purifier of claim 21.

37. (New) The garbage disposer of claim 21,

wherein said purifier includes a temperature detector, and

when said temperature detector detects abnormal combustion in said purifier, the operation of at least one of said main heater and said catalyst heater is discontinued.

38. (New) The garbage disposer of claim 21,

wherein said purifier further comprises a pipe,

said catalyst heater is installed in said pipe;

said plurality of thin plates are fixed around said pipe;

said through-hole and said partition plate are disposed in positions such that the exhaust gas is circulated through the spaces;

said thin plates are made of metal;

said pipe is also made of metal; and

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the catalyst has a function of deodorizing the exhaust gas.

39. (New) The garbage disposer of claim 21,

wherein said partition plate is bonded to each of said thin plates.

40. (New) The garbage disposer of claim 21,

wherein at least one of said partition plate and said through-hole is formed by cutting and raising said thin plate.

41. (New) The garbage disposer of claim 21, further comprising:

wire netting disposed along the periphery of said thin plates; and

a heat insulating material disposed around said wire netting,

wherein each of said thin plates is substantially circular in shape;

said case is substantially cylindrical in shape; and

said wire netting and said heat insulating material are disposed in said case.

42. (New) The garbage disposer of claim 21,

wherein said partition plate includes a plurality of partition plates;

said through-hole includes a plurality of through-holes;

a plurality of spaces separated by said plurality of partition plates are formed between the respective thin plates;

said spaces are respectively connected to said through-holes;

the exhaust gas enters into said case from said inlet, and is separately circulated passing through respective ones of said spaces and said through-holes and is exhausted from said outlet.



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43. (New) The garbage disposer of claim 21,

wherein said purifier further comprises:

an inlet pipe disposed at said inlet;

an outlet pipe disposed at said outlet;

a low-temperature catalyst that functions at a lower temperature as compared with the catalyst mentioned earlier; and

said low-temperature catalyst is disposed in at least one of said inlet pipe and said outlet pipe.